

11. A method of controlling a power level of a power amplifier for producing an RF output signal in accordance with a modulation signal, comprising:
generating a specified voltage in accordance with a control signal, the specified voltage being independent of the modulation signal; and
applying the specified voltage to a power amplifier as a supply voltage of the [switch-mode] power amplifier.

REMARKS

The Office Action of June 25, 1999 has been carefully considered. In response thereto, the claims have been amended as set forth above. Withdrawal of the rejection and allowance of the present application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1 and 6-11 were rejected as being anticipated by Bickley. Claims 2-5 were rejected as being unpatentable over Bickley in view of Strickland and Schwent.

At the outset, Applicant notes that claims 6-10, rejected as being anticipated by Bickley, are ultimately dependent on claim 2, rejected as being unpatentable over Bickley in view of Strickland and Schwent. Presumably, claims 1 and 11 were intended to be rejected under 35 U.S.C. §102, and claims 2-10 were intended to be rejected under 35 U.S.C. §103. Clarification is respectfully requested.

Claims 1 and 11 have been amended to more clearly distinguish over the cited references. Reconsideration is respectfully requested.

In particular, claims 1 and 11 have been amended to recite that a specified voltage produced by the voltage regulator means is independent of the modulation signal of the RF power amplifier, unlike Bickley in which the power level is directly dependent on the modulation signal.

That is, in Bickley, as seen in the cover figure thereof, a modulation signal V_{MOD} is applied to the switching power converter 50, which produces a *similarly modulated* power supply voltage V_{SUPPLY} to the RF power amplifier 144. Note Figures 5A and 5B of Bickley, showing V_{MOD} and V_{SUPPLY} , respectively. Although increased efficiency is obtained, the

frequency of the switching power converter 50 is required to be fairly high, which leads to an expensive solution.

In the present invention, on the other hand, the supply voltage produced by the voltage regulator means is *independent* of the modulation signal. In an exemplary embodiment, the voltage regulator means is realized as the series combination of a switch-mode converter and a linear regulator. The switch-mode converter may be low-frequency and inexpensive. It is only required to produce a voltage that is fairly close to the desired voltage. The voltage need not be "clean" but can be fairly noisy. The subsequent linear regulator then produces a clean voltage that is then applied to the power amplifier.

In view of the foregoing substantial differences, Applicant submits that claims 1 and 11 as amended are not anticipated by Bickley.

As to the proposed combination of Bickley, Strickland and Schwent (claims 2-10), Applicant submits that the combination is seriously flawed.

First, as to Bickley and Strickland, whereas Bickley pertains to an RF amplifier, Strickland pertains to an audio amplifier. For this reason alone, the teachings of Strickland would not be expected to pertain to Bickley.

More importantly, Strickland does not teach what the Office Action maintains it teaches. The second full paragraph of col. 2 of Strickland, relied upon in the Office Action, simply describes the signal and efficiency characteristics of prior-art class A audio amplifiers. Such amplifiers exhibit very good linearity (i.e., low distortion) but low power efficiency. This reference to linearity has absolutely nothing to do with a linear regulator as in claim 2.

The paragraph also describes that, in such amplifiers, the output current is "limited" to a factor of two times the idling current present in the circuit. This "limiting" action is wholly unrelated to the use in the present invention of a "hard-limited" power amplifier, which is highly *non-linear*, very unlike the very linear Class A audio amplifier described in the Background of Strickland.

Thus, one can see that even if one of ordinary skill in the art were to for some reason combine the teachings of Bickley and Strickland, the result would still be something far short of the present invention.

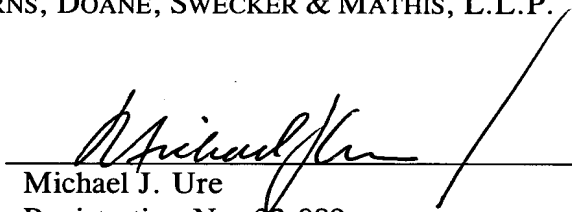
Schwent describes an RF amplifier operable in either a linear mode or a saturation (constant-envelope) mode. Schwent, however, in no way teaches or suggests the features of claim 1 absent from Bickley.

Accordingly, claims 1 and 11 are believed to patentably define over the cited references. Claims 2-10 are also believed to add novel and patentable subject matter to claim 1. Withdrawal of the rejection and allowance of claims 1-11 is respectfully requested.

Respectfully submitted,

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